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The Death Penalty

THE practice of taking the life of one who had taken the life of another originated in primitive societies as an act of family vengeance; and this reprisal has persisted in some communities as vendetta. In Britain the death penalty is a solitary instance of punishment matched with crime. Last week the House of Commons resolved, on a free vote and against the Government's advice, that such punishment should be abolished or suspended.

The issue between the defenders of this penalty and its opponents has now been narrowed to a single question—whether its application has a unique deterrent effect. In the debate Major GWILYM LLOYD-GEORGE, the Home Secretary, declared: "Let me say emphatically that I believe capital punishment to be justified only if it is likely to reduce the amount of murder." The Royal Commission on Capital Punishment found "no clear evidence in any of the figures we have examined that the abolition of capital punishment has led to an increase in the homicide rate, or that its reintroduction has led to a fall." But it added: "The negative conclusion we draw from the figures does not of course imply a conclusion that the deterrent effect of the death penalty cannot be greater than that of any other punishment. It means only that the figures afford no reliable evidence one way or the other."

There being no good evidence that hanging murderers checks the number of murders, the case for discontinuing this rough justice seems to us unanswerable. Firstly, by ending the life of a murderer we impose gross suffering on his relations, before and after the execution. Secondly, in a trial for murder, juries, aware of the grim decision before them—and perhaps of the conceivable risk of exterminating an innocent victim—are reluctant to bring in a verdict of guilty. (A law which may thus be imperfectly applied is a bad law. Nor is the final decision by one man regarding reprieve fair to the prisoner, whose life depends on the decision, or to the Home Secretary, who must make the decision.) Finally, our society damages itself by giving its warrant to the killing of any of its members; and this damage is made the worse by newpaper accounts of the final days and hours of the murderer's life, which, like the public executions of bygone days, satisfy and promote a morbid appetite.

At the start of the 19th century over two hundred crimes were punishable by death. The curtailment of the death penalty was accompanied by widespread forecasts of increases in crime. These forecasts were not fulfilled. We welcome the Prime Minister's assurance that he will seek to give effect to the Commons decision; and we hope that when the time comes the House of Lords will bear in mind the country's growing uneasiness about this grotesque legacy from our forefathers.

The Patient and his Cell Nuclei

THE development of a new and important diagnostic technique creates fresh difficulties, even though it contributes to the solution of existing ones. There is, for example, the practical problem of ensuring that the new method, when it has left the hands of its pioneers and is put to routine use in laboratory or ward, is performed and interpreted by those who are aware of its difficulties and its limitations. For these reasons Professor BARR'S views[1] on the conclusions to be drawn from the cytological tests of sex are particularly welcome. He reminds us that it is too early to assume that the "female" sex chromatin is in fact derived from two X chromosomes, and therefore we should not yet use the expressions "chromosomal sex" or "genetic female" or "genetic male." He proposes the sensible alternative, for use in the clinic or outpatient department, of "chromatin positive" (female) or "chromatin negative" (male), in order that no suggestion can, by mischance, be conveyed to any patient that the "maleness" or "femaleness" of the body-cells is at variance with sexual anatomy—and, he might have added, with the patient's body-image and inner concept of sexual status. Nor should this information be deliberately given to the patient or to relatives. GRUMBACH *et al.*[2] believe "it is most important that the patients and their families should not be informed concerning their chromosomal sex when a male chromatin pattern is found, in view of present-day misconceptions of the importance of chromosomes in determining psychosexual outlook." This opinion has the authority of the senior author, LAWSON WILKINS, whose experience of the sexual deviations of children, chromosomal and hormonal, is unrivalled.

Few will dispute this advice, but the reason for it should perhaps be further emphasised. The sexual orientation of an individual is not determined either by the sex chromosomes or by the hormones, and still less by the chromatin in the cells of the skin. It would be very unwise to attempt to change the psychosexual habit which has been established through the years of growth, or even to convey information which will challenge the integrity of this personal image. HAMPSON *et al.*,[3] working in Wilkins's clinic, studied 11 girls and women with gonadal agenesis who were chromosomally male, and all of them "were found unequivocally to fulfill the cultural and psychological expectations of femininity. The salient finding to emerge from the study was that a person's conviction of himself as a man or herself as a woman—the gender rôle and erotic orientation—is a variable quite independent of genes and chromosomes." Cytological sexing is therefore another of the findings which the doctor should not pass on to patients and their relatives, for its exact significance will not be understood and its real importance may be misconstrued. The doctor's duty is to shoulder, on behalf of his patient, the diagnostic and therapeutic responsibilities involved.

In the management of hermaphrodites, female pseudohermaphrodites, male pseudohermaphrodites, and patients with gonadal dysgenesis, the new methods have done much to increase diagnostic precision, and they enable a rational plan of treatment to be made in the first few weeks of life, when these anatomical deviations

1. Barr, M. L. *Lancet*, Jan. 7, 1956, p. 47.
2. Grumbach, M. M., Van Wyk, J. J., Wilkins, L. *J. clin. Endocrin.* 1955, **15**, 1161.
3. Hampson, J. L., Hampson, J. G., Money, J. *Bull. Johns Hopk. Hosp.* 1955, **97**, 207.

may be first recognised. The importance of a quick decision when the sex of a newborn child is in doubt needs no emphasis. We recently reviewed [4] the value of the various techniques available. From the point of view of treatment, the diagnosis of female pseudohermaphroditism (congenital adrenal hyperplasia) is urgent, for these girls may be salt-losers and often have an addisonian crisis. They are born with a phallus of varying size, but with fallopian tubes, uterus, and vagina. The vagina commonly communicates with the urethra to form a urogenital sinus with an orifice at the base of the clitoris.[5] Some types of intersex have identical external genitalia, and here cytological sexing—a positive chromatin test in patients with congenital adrenal hyperplasia—establishes the diagnosis; and this can be confirmed by an output of urinary 17-ketosteroids which is high for the patient's age. Cortisone therapy must begin at once, and electrolyte abnormalities must be corrected. Rare cases have been described in which the external genitalia have an identical conformation but in which, although the nuclear sex is also female, the output of 17-ketosteroids is normal and not raised as in adrenocortical hyperplasia. These children should be brought up as girls, and may require plastic surgery later.[6]

In girls with a webbed neck or coarctation of the aorta, cytological sexing and the finding of chromatin-negative cells establishes the diagnosis of gonadal dysgenesis, allows a prognosis to be given about height and sexual development, and permits the important œstrogen therapy to be given at the age of puberty. Gonadal dysgenesis is the extreme form of male pseudohermaphroditism; the patients are genetic males in whom complete feminisation has occurred (without müllerian-duct development—i.e., fallopian tubes and uterus). Hypospadias may be regarded as the least extreme form of male pseudohermaphroditism, for here the urogenital sinus has not been quite converted to the normal male urethra. Varieties of male pseudohermaphroditism between these two extremes may still pose problems in management and raise considerable difficulties for the plastic surgeon. The general principle is that, both in male pseudohermaphroditism and in "true" hermaphroditism, the character of the external genitalia must still be a determining factor in the management of the patient. If the plastic surgeon thinks it possible to construct a penis out of the phallus and if the cytological sexing is male, no problem arises. If the external genitalia are so feminine that the plastic surgeon will be unable to construct a male organ and a penile urethra, then the child should be brought up as a female whatever the cytological sexing; and, if necessary, testes must later be removed and œstrogens given at adolescence. These problems in male pseudohermaphrodites usually appear at puberty in "girls" who do not menstruate or who are developing external male characters. Opinions differ, however, about their management, and sometimes no treatment can hope to achieve full success.

We shall never remedy all the errors of sexual development: we cannot bestow fertility where Nature has ordained barrenness; but we can ensure a normal gender rôle, a satisfactory sexual orientation, and the possibility of a happy married life for these patients. These are great advances which, until recently, have been won for us entirely by the chemists, the endocrinologists, and the plastic surgeons. It is pleasant to record our indebtedness to a biologist, JOST,[8 9] who, by his brilliant experiments on rabbits, demonstrated that the removal of the fœtal testis produced males with a feminine sex development (the experimental equivalent of human gonadal dysgenesis), while the castration of the female fœtus did not prevent differentiation in the female genital system; and to the cytologists, BARR and his associates,[10] who were the first to observe a sex difference in the nuclear chromatin of somatic cells.

4. See *Lancet*, 1955, ii, 655.
5. Wilkins, L. The Diagnosis and Treatment of Endocrine Disorders in Childhood and Adolescence. Oxford, 1950; p. 262.
6. Broster, L. R. *Brit. med. J.* Jan. 21, 1956, p. 149.
7. Armstrong, C. N. *Ibid*, 1955, i, 1175.
8. Jost, A. *Arch. Anat. micr. Morphol. exp.* 1947, **36**, 271.
9. Jost, A. *Gynéc. et Obstét.* 1950, **49**, 44.

Annotations

FRESH MILK OR TABLETS?

THE idea of giving schoolchildren a third of a pint of milk a day for a halfpenny originated with the Milk Marketing Board, and, in 1934, the Board of Education recommended local education authorities to take advantage of the scheme. The Education Act of 1944 required local authorities to give milk to all children in maintained schools, and since 1946 there has been no charge. Until October, 1954, the supply was arranged and paid for by the Ministry of Food. At that time regulations made by the Minister of Education placed on local education authorities the responsibility of ordering and paying for the milk. Local authorities were asked to introduce normal tendering arrangements not later than April 1, 1955. Fresh milk must be supplied: other forms of milk cannot be substituted without the approval of the Ministry of Education.

Lately some remotely placed schools have been unable to get fresh milk, and in a reply to a question in Parliament last October it was stated that seventeen education authorities had, for this reason, been given approval to supply either dried milk or milk tablets instead. But the difficulty in getting fresh milk to schools is not the only point at issue, and the question of cost has been causing concern to some councils. The national bill for school milk is about £10 million a year: London pays about £750,000 and Surrey £270,000 per annum. Both these county councils have discussed recently the reluctance of milk-suppliers to allow discount, or to agree to competitive tenders. The Ministry of Education, in a letter to local authorities on Dec. 12, reaffirmed the policy that milk for schools should be bought at competitive prices; and the Ministry gave assurance of Government support in pursuing it. Support is evidently necessary; for the recent report of the Committee on Public Accounts shows that there is widespread opposition from the milk trade to competitive tendering: "efforts to secure genuinely competitive prices had generally met with opposition by the trade even to the extent in some cases of denial of supplies to tenderers who offered a discount." It seems that in the past year at least six local authorities have been permitted by the Minister to use milk tablets because the price asked for fresh milk was unreasonable.[11] Pending further decisions on policy, the Ministry has advised local education authorities not to enter into long-term contracts when they are unable to obtain reasonable supplies of milk at reasonable prices.

The Minister of Education said in Parliament on Oct. 27 that although there was no suggestion that milk tablets were as good as liquid milk, they were an adequate substitute. Fruit-flavoured tablets have been produced (ten daily are equivalent to a third of a pint of milk) and children are said to like them, especially children who have not previously had fresh milk at school. But in one area the children's reaction to the tablets was described rather cryptically as "by no means unfavourable."

Many people will feel that there is little justification in this country for substituting tablets for fresh milk except in a few country districts where there is no adequate supply of pasteurised milk. And certainly it seems very wrong to have to make the change because prices are kept up by suppliers. We are glad to note that in some places the introduction of tablets has induced the milk-suppliers to change their attitude, and after further negotiations a lower price has been agreed to. But in many parts of the country the milk-suppliers persist in their refusal to let local authorities have milk at a competitive price; and the Committee of Public Accounts does well to speak severely of this unwillingness to coöperate in a service of such undoubted value to the children of the country.

10. Moore, K. L., Graham, M. A., Barr, M. L. *Surg. Gynec. Obstet.* 1953, **96**, 641.
11. *Times*, Jan. 5, 1956

GLUTEN TO BLAME?

In a letter in our last issue, and in more detail at a meeting of the section of general practice of the Royal Society of Medicine on Feb. 15, Dr. Guy Daynes described what he called the "pre-coeliac syndrome", a disturbance of convalescence in young children and possibly also in adults. He has noted over 40 examples in children in his own practice and clinics in 2½ years. Most of those affected were between 1 and 5 years old. They were just getting over an acute infection when they began to be irritable and spiteful, to wake screaming in the night, and to lose appetite and weight. At the same time the stools became bulky. The child usually recovered slowly but spontaneously in a few weeks. But, Dr. Daynes found, recovery was complete in two days when the child took a diet containing no wheat-flour; and relapse was equally dramatic if this diet was stopped too soon. Dr. Daynes thinks that adults with insomnia, headache, and depression also respond well to such a diet, and suspects that the gluten of the flour is toxic, because it is the gluten which is altered by the chemical improver, agene, with the production of methionine sulphoximine, which causes hysteria in dogs. And it is well known that true coeliac disease improves promptly when gluten is excluded from the diet.

Some speakers at the meeting felt that Dr. Daynes had carried his views rather further than the evidence warranted. It was pointed out that there was little apparent similarity between canine hysteria and coeliac disease. Prof. A. C. Frazer remarked that true cœliac disease varied considerably in its manifestations from patient to patient; if the condition Dr. Daynes described has a similar origin one would expect the same sort of wide variation.

The exclusion of wheat-flour means the exclusion of all bread and pastry, sausages, chocolate, tinned meat-loaf, and much else; and this obviously alters the starch and roughage content of the diet. Before gluten alone can be convicted, the evidence must show clearly that the addition of pure gluten causes a relapse. The question of vitamins and calcium must also be considered. Individuals may differ considerably in their vitamin requirements: Hersov[1] recently described an English schoolboy who had pellagra with mental symptoms while eating fairly normally—apparently because his need for nicotinamide was far higher than normal. What happens to the intestinal flora during acute infection and convalescence, how glands like the pancreas respond to virus infections, and how the individual's biochemical requirements vary, are little-studied but important matters. General practitioners are often in the best position to observe the phenomena of convalescence, and to delineate the syndromes which may appear. But the clinical pathologist is needed when it comes to disentangling the underlying causes. A syndrome may be the final manifestation of several distinct pathological processes, and only the laboratory can differentiate them.

THE EMBOLIC CANCER CELL

THE lymphatic spread of cancer is so common and so apparent that its detailed study may not get the attention it deserves. In his book on the spread of tumours, Willis[2] described with great accuracy the morbid anatomy of 500 necropsies he had himself performed and he made an extensive, though admittedly incomplete, survey of the literature of the spread of cancer. Some further work is now in hand in Philadelphia where a group of workers is studying experimentally the spread of cancer in the lymphatic system. Their first task was to find a reliable experimental technique.[3] By injecting suspensions of cancer cells into the afferent lymphatic vessels in the calf of the rabbit, they were able to show that tumour-cell emboli, on entering the regional lymph-gland, were immediately held up in the subcapsular sinus and did not reach the hilar sinus, or escape from the gland. Moreover, they found that at least three weeks (and sometimes longer) elapsed before tumour cells escaped from the lymph-gland. This did not occur until the gland was almost completely replaced by tumour, at which stage cancer cells might spread from it to the blood-stream. Zeidman et al.[4] then tried to find out whether it was possible to attack secondary deposits in the lymph-glands by injecting chemotherapeutic agents into the afferent vessel, but they were unable to demonstrate any lymphatic channels in such carcinomatous deposits. The next extension of the work[5] was to ascertain what happened to tumour cells injected into the thoracic duct. In all the rabbits so treated many pulmonary tumours developed, owing to the direct passage of tumour-cell emboli from the duct to the veins; and in all but one secondary deposits appeared in mediastinal and intercostal lymph-nodes, despite the fact that there was no obstruction to the thoracic duct at its entrance to the venous system. By injecting dyes into the thoracic duct, it was shown that channels pass from it to the lymph-glands. When tumour cells leave the thoracic duct and lodge in the glands, they are found in the subcapsular sinuses, and it seems therefore that they are taken there by true afferent vessels. This was also the case when tumour cells reached the left supraclavicular glands. Zeidman et al. conclude that tumour cells reach thoracic lymph-glands more commonly by direct spread via afferent lymph-vessels than by retrograde embolism. Thus Troisier's sign of enlarged supraclavicular glands may be explained by the direct passage of tumour cells from the thoracic duct to the glands, without the intervention of retrograde embolism aided by obstruction or of direct extension through the wall of a cancerous thoracic duct.

These experiments remind us that the lymph-glands are the first barriers to the embolic spread of tumour cells. It would be well to consider what means might be used to increase the effectiveness of this lymphatic barrier by chemicals or hormones. One grave objection to the use of radiation for the treatment of cancer already established in lymph-glands is the fact that adjacent unaffected lymphoid tissue is thereby depressed. Should we not do less chasing of the hare from behind and make more effort to trap it from in front?

CAVERNOUS PORTAL VEIN

PROGRESS in the surgical treatment of portal hypertension has reawakened interest in the various causes of portal obstruction. Among the less common is the so-called cavernous transformation of the portal vein. Although the first example was reported in 1868[6] and only 22 further case-reports appeared in the next sixty years,[7] two recent accounts,[8,9] based on 6 and 4 cases respectively, probably give a truer impression of its frequency.

In this condition, the naked-eye appearance of the structures in the portal fissure is characteristic. The portal vein itself is usually unidentifiable amongst the sponge-like mass of vessels. This apparent replacement of the portal vein by a cavernous angioma usually extends in both directions, upwards into the liver along the portal tracts and downwards into the hepatoduodenal ligament. But histological examination, especially with elastic-tissue stains, shows that the portal vein is still present but obscured by thrombotic obstruction and recanalisation of its lumen and by the mass of collateral vessels around it.

The clinical picture is remarkably uniform and is, in the main, what one would expect from a slowly developing portal obstruction. Hæmatemesis from œsophageal varices is usually the presenting symptom, although it is often preceded by upper abdominal pain of varying severity. Ascites is almost always absent—a finding in harmony with the present view that ascitic fluid is produced almost exclusively within the liver as a result of obstruction to its venous outflow.[10] Jaundice is rare and there is seldom any evidence of impaired liver function. The spleen is enlarged, often considerably so, and hæmatological indications of hypersplenism are common, although the anæmia is more probably due to the recurrent hæmatemeses. Almost inevitably the illness ends fatally within a few months or years of the clinical onset—often when extension of thrombosis into the superior mesenteric veins leads to infarction of the small bowel.

Three views have been advanced to account for this anomaly. The first regards the lesion as a tumour-like overgrowth of vascular tissue corresponding to cavernous angiomata in other parts of the body. The second regards it as a developmental abnormality comparable to the cavernous type of portal vein found in amphioxus and some of the cyclostomes. The most

1. Hersov, L. A. *J. ment. Sci.* 1955, **101**, 878.
2. Willis, R. A. The Spread of Tumours in the Human Body. London, 1952.
3. Zeidman, I., Buss, J. M. *Cancer Res.* 1954, **14**, 403.
4. Zeidman, I., Copeland, B. E., Warren, S. *Cancer*, 1955, **8**, 123.
5. Zeidman, I. *Cancer Res.* 1955, **15**, 719.
6. Balfour, G. W., Stewart, T. G. *Edinb. med. J.* 1868–69, **14**, 589
7. Klemperer, P. *Arch. Path.* 1928, **6**, 353.
8. Gibson, J. B., Richards, R. L. *J. Path. Bact.* 1955, **70**, 81.
9. Parker, R. A., Seal, R. M. E. *Ibid*, p. 97.
10. Madden, J. L., Lore, J. M., Gerold, F. P., Ravid, J. M. *Surg. Gynec. Obstet.* 1954, **99**, 385.

widely held and best-substantiated view, however, is that the cavernous transformation is entirely secondary to a slowly developing occlusion due in most cases to thrombosis. The remarkable extent of the compensatory changes is, according to Gibson and Richards,[8] due to local conditions around the portal vein, especially the relatively high venous pressure and the close anatomical relationship between the accessory portal veins and the main stem. It is these factors that favour the formation of cavernous tissue around the portal stem, since all the compensatory collateral vessels are bunched together with the main vein in the hepatoduodenal ligament. Usually there is little evidence of the underlying cause of the thrombosis. Predisposing conditions such as syphilis or blood disorders (e.g., polycythæmia) have proved to be unimportant. The most probable cause is some low-grade intra-abdominal infection leading to a chronic pylephlebitis.

Treatment must obviously be directed towards the relief of the hypertension in the portal system. The involvement of the portal vein and usually the splenic vein may make a short-circuit operation difficult or even impossible. In such cases direct treatment of the œsophageal varices may become a necessary life-saving measure.

A HYPOGLYCÆMIC PUZZLE

SEVERE spontaneous hypoglycæmia is uncommon, and of several possible causes,[1] islet-cell tumour of the pancreas and liver disease are probably the best recognised. A more unusual cause is a large upper abdominal tumour not arising from the pancreas and not associated with extensive destruction of the liver; and such a case has recently been described by Silvis and Simon.[2] The presenting features were personality changes and weakness and faintness in the morning. Later the patient had two episodes of hypoglycæmic coma in which his blood-sugar levels fell to 35 and 32 mg. per 100 ml. Consciousness was promptly restored by intravenous glucose. A large hard mass was felt in the right flank, and he was accordingly prepared for operation by the administration of 400 g. of glucose daily for four days. A huge ovoid retroperitoneal tumour was found, occupying the entire right posterior part of the abdomen and involving the iliopsoas muscle. The tumour extended posteriorly between the transverse processes of the upper lumbar vertebræ, and this part had to be removed at a later operation. The specimen weighed 1200 g. and proved to be a retroperitoneal fibroma. Immediately after operation the glucose requirements and the glucose-tolerance test became normal. Eighteen months later there was no evidence of a recurrence and there had been no hypoglycæmic attacks or other symptoms.

Silvis and Simon draw attention to 5 previously reported cases in which hypoglycæmia was associated with large tumours not arising from the pancreas. In Seckel's case,[3] hypoglycæmic coma was associated with a massive fibroma above the right lobe of the liver, bulging against the medial aspect of the right leaf of the diaphragm. The pancreas was normal and no metastases were found. An assay of the fibroma for insulin was negative. The patients of Hines [4] and of Arkless [5] had sarcomas in the upper part of the abdomen and suffered from hypoglycæmic attacks; in both the pancreas was normal. Rosenfeld's 2 patients[6] had peritoneal pseudomyxomatous cysts.

No one has produced a convincing reason why these patients had hypoglycæmia. The pathology of the tumours varied. In the one assay reported no insulin was detected, and from the histology of the other tumours it seems improbable that they produced any internal secretion with a hypoglycæmic action. Hepatic failure could not be blamed. Excessive utilisation of glucose by the tumour is unlikely, since extensive carcinomatosis and large benign growths generally lead to a rise rather than a fall in blood-sugar.[7] The common features of the reported cases are large tumours pressing on structures in the upper and posterior part of the abdomen and displacing viscera. The riddle remains to be solved.

1. Conn, J. W. *J. Amer. med. Ass.* 1940, **115**, 1669.
2. Silvis, R. S., Simon, D. S. *New Engl. J. Med.* 1956, **254**, 14.
3. Cited by Brunschwig, A. Surgery of Pancreatic Tumours. St. Louis, 1942; p. 337.
4. Hines, R. E. *Med. Bull. Veterans' Adm., Wash.* 1943, **20**, 102.
5. Arkless, H. A. *Ibid*, 1942, **19**, 225.
6. Rosenfeld, E. D. *Arch. Path.* 1949, **48**, 255.
7. Woodward, G. E., Fry, E. G. *Biochem. J.* 1932, **26**, 889.

Letters to the Editor

Anticonvulsant Action of Acetazolamide.—After reading your annotation (Feb. 11) we feel that it is a matter of duty to describe some results of a research on the biochemistry of epilepsy in progress at the Burden Neurological Institute. In view of the trend of your annotation, it appears to be a matter of some urgency to point out the great therapeutic efficiency of acetazolamide in inhibiting petit-mal attacks.

In assessing any drug in the treatment of epilepsy the safest rule is to add the drug to the treatment that the patient has been receiving for some considerable period. Without, therefore, varying the treatment that had obtained for a minimum of three months, 70 such cases of petit mal were given in addition a daily dose of 250 mg. of acetazolamide ('Diamox,' kindly supplied in ample quantity by Messrs. Lederle). 51 of these cases were attending the Burden Neurological Institute clinic, and to these were subsequently added 19 similar drug-resistant cases attending the Musgrove Park Hospital, Taunton. It must be emphasised that only patients with daily minor attacks were selected. The patients were mostly children and adults aged 6–35, and the fit incidence varied from about a hundred attacks to one attack a day, and all cases had resisted attempts to abolish the daily incidence of attacks with every form of drug treatment. No case with a daily incidence of less than one attack was considered. Of all 70 cases, only 2 were recorded as having shown no improvement at all. 25 patients had no further attacks during the first month of treatment with acetazolamide. In the remaining 43 cases the attack incidence dropped to one or two during the month. During the second month of treatment the improvement was maintained and the number of those still having occasional petit-mal attacks diminished to about 20. In the third month some of the cases which had responded by total absence of attacks had one or two further attacks; and in 1 case, where before treatment the daily incidence had been almost uncountable (probably more than 200), the incidence after being inhibited completely for the first two months reverted to two or three a day. In such cases increasing the dose to 500 mg. per diem led to some further improvement. Most convincing were the effects of suspending the treatment. Even twenty-four hours' abstention generally resulted in reversion to the prior condition.

At this stage we prefer to make no assessment of the effect on major attacks, and it is only the feeling that we are not justified in withholding information any further as to the phenomenal effect of acetazolamide on cases of resistant petit-mal attacks that has led us to ask you to publish this letter. No side-effects, beyond somnolence and occasional formication of the extremities in a couple of cases, were noted.—Prof. F. GOLLA, F.R.C.P.; R. SESSIONS HODGE, M.R.C.S. (Burden Neurological Institute, Bristol).

Billroth-1 and Polya Operations—The high incidence of re-ulceration after a Billroth-I partial gastrectomy in the treatment of duodenal ulcers, demonstrated by the Leeds professorial unit (Feb. 4, p. 220), is of great importance at this time when the popularity of the operation is increasing. In the majority of cases the recurrent ulcer was in the stomach. This gastric ulceration is possibly comparable to that after simple vagotomy for duodenal ulcers (L. R Dragstedt, H. A. Oberhelman jun., O. S. Evans, S. P. Rigler, *Ann. Surg.* 1954, **140**, 396) which is apparently produced by gastric stasis due to the reduced gastric tone and incoördinated peristalsis, since it does not occur if the stomach is adequately drained by a gastroenterostomy. If the gastric recurrences after gastrectomy are also due to stasis, vagotomy would be expected to increase stasis and worsen the condition—as appears to have happened in a third of the cases so treated.

The cause of gastric ulceration after operations for duodenal ulcers, in which gastric stasis has been produced, is unknown; but Dragstedt has demonstrated experimentally a possible explanation. In dogs with a denervated Pavlov pouch, artificially produced pyloric stenosis increases the rate of gastric secretion and may produce a gastric ulcer; if the stasis is relieved by a gastro-enterostomy, there is no increase in secretion and ulceration does not occur. Similarly, vagotomy, by decreasing the tone and peristalsis, causes gastric stasis and produces an increased flow of gastric secretion from the denervated gastric pouch.

While conclusions drawn from experimental findings are sometimes invalid for man, the similarity of the results here

points to stasis as the cause of gastric ulceration in both. Why recurrent gastric ulceration after a Billroth-I operation for a gastric ulcer is rare, is uncertain. It could be that the less radical resection and easier anastomosis carry less risk of stenosis; more probably, there is some essential difference in gastric physiology in gastric and duodenal ulcers.

Whether the high incidence of gastric ulceration is going to prove universal or is due, in this series, to some variation in technique producing stasis, only further follow-up series will show. Meanwhile, these results demonstrate that recurrent gastric ulcers should be treated, not by vagotomy, but by alteration of the anastomosis to a Polya type and that the combination of a vagotomy with Billroth-I gastrectomy is unlikely to be satisfactory.—B.V.McEVEDY, F.R.C.S. (University College Hospital, London, W.C.1.)

Vaccinia versus Poliomyelitis.—I read with great interest Dr. MacIver's article (Feb. 4). In the United States vaccination against smallpox is required before a child may enter a school supported by State funds. This usually occurs by the age of 6-7 and has not, as far as can be discovered, had any moderating effect on the reported cases. In fact the Polio Foundation has regarded this as the most susceptible group. The first trial of Salk vaccine was on children in the first and second grades.—Colonel CHARLES H. MORHOUSE, M.D. (Third Air Force, Ruislip, Middlesex).

The Future of the Chest Service—Your annotation of Feb. 11, entitled Tuberculosis Then and Now, makes some far-reaching suggestions with regard to the chest service in this country without producing evidence to give them weight and substance. The degree of misapprehension of the present position it exhibits is considerable and could lead to much undesirable friction between chest physicians and clinicians in general hospitals; as future considerations will demand their closer collaboration, the whole situation requires to be examined most carefully.

Prior to 1948, the tuberculosis services in this country were the responsibility of the local authorities; some were good, others indifferent; in many districts radiological facilities were limited, diagnosis was thereby delayed and treatment suffered severe limitations because of the stage at which the disease was discovered and the stringency of the thoracic surgical services available. The National Health Service has done much to remedy these deficiencies, particularly in backward areas, and the introduction of effective chemotherapeutic agents has contributed to an unprecedented fall in the death-rate; so much so that there is a tendency in some responsible quarters to assume that this breakthrough is equivalent to final victory. You, Sir, have previously drawn attention (*Lancet*, Oct. 22, 1955, p. 857) to the prematurity of this assumption and to the need for strengthening the emphasis on prevention (*Lancet*, Nov. 26, 1955, p. 1125). But to appreciate the situation fully, attention must be accorded to the chest-clinic service.

The key position of the chest clinic in present circumstances has arisen simply and naturally from the resources which modern technology has placed at its disposal; in addition to ordinary large-film radiography, the miniature camera has brought about in some clinics a fourfold increase in the number of persons sent for X-ray examination by general practitioners, and many of the abnormalities detected by mass radiography are referred to the clinic physician for investigation and treatment. While still fulfilling his considerable responsibilities with regard to tuberculosis, the clinic physician, as a direct result of modern advances in equipment, now finds himself overwhelmed with cases of non-tuberculous respiratory ailments of every conceivable kind for which treatment facilities are inadequate and preventive measures rudimentary. The training in environmental medicine which tuberculosis has given him prompts him to do his best for these patients—of all ages—who come to him with non-tuberculous lung disease, many of whom present sociomedical problems similar to those met with in tuberculosis and to deal with which the chest clinic possesses the appropriate organisational nucleus in the form of health visitors and social workers.

But present circumstances often preclude the chest physician from undertaking more than a fraction of what requires to be done; and pleas to his administrators are too often countered with the argument that as tuberculosis is declining and economy a prime consideration, demands for additional staff would appear to be ridiculous. But it is no economy to have men who should be engaged in industry on sick benefit for months on end or to allow a child to develop into a chronic bronchitic or bronchiectatic.

The unpalatable truth is that the people of this country suffer more from chronic respiratory disease than those of any other country in the world, that present arrangements for dealing with the situation are insufficient and lack coördination, and that we have barely begun to think about the problem of prevention. The decline in tuberculosis has helped to unmask this long-existent menace to the national health, which now faces us in the grisly reality of 30,000 deaths per annum from "bronchitis" (nearly four times the mortality from tuberculosis), over 16,000 deaths from bronchial carcinoma (more than twice that of tuberculosis), an increase in deaths from certified pneumoconiosis in miners from 232 in 1940 to 1016 in 1953 (McLaughlin, A. I. G. *J.R. Inst. publ. Hlth*, 1955, **18**, 218 (see table III, p. 227.)), and an untold morbidity amongst the childhood population which will seriously affect their health in later years.

The problem is far from insoluble but it is apparent that if the massive subject of chronic respiratory illness in this country is to be seriously tackled a considerable reorientation of outlook is required. Early consideration could well be given to increasing—even doubling—the number of consultant appointments in chest disease in industrial areas, where the morbidity from tuberculosis remains high and the incidence of other respiratory diseases is significantly greater than elsewhere; not only would this relieve the present situation in a field which has an excessive proportion of S.H.M.O. appointments, but it would encourage young men to enter a broadened specialty where indeed their services will be required for many years to come.

Finally, there is a great need for closer coöperation between the medical specialists dealing with the different aspects of respiratory illness. Besides physicians in chest clinics, and physicians and surgeons in chest hospitals, there is much that can be done by general physicians, pædiatricians, geriatricians, ear, nose, and throat specialists, respiratory physiologists, physical-medicine experts, industrial medical officers, medical officers of health, statisticians, and general practitioners. The help of all these—and more will emerge—is required to deal adequately with the problem of chest illness as it exists in this country today; and the integration of the various specialties to provide a fully functional chest service is clearly an administrative problem of the first importance. Such a service should include all who have something to contribute, and existing barriers to coöperation should be removed.—NORMAN MACDONALD, F.R.C.P.E. (Clare Hall Hospital, South Mimms, Barnet.)

Mass Radiography.—On Feb. 11 you reported Prof. A. P. Thomson as saying that "among the patients in the Birmingham area examined by mass radiography in 1954, tuberculosis was found nearly seven times more frequently in those referred by general practitioners than in those in all the other groups. This suggested that doctors did not neglect to examine their patients before referring them for radiography." May I point out that mass radiography is radiography without a prior medical examination—not an aid to clinical medicine, but a substitute for it. The practitioners were not in fact using mass radiography at all; they were using the unit in the way I suggested when the mass radiography scheme was found to be unsatisfactory, as I had predicted (*Postgrad med. J.* 1944, **20**, 135; *Med. Wld*, March 31, 1944). The 31,249 patients sent by practitioners were examined and then referred for radiography to confirm the clinical findings. The practitioners use the mass radiography unit because they cannot, as in private, refer cases direct to the radiologist but must send them to an intermediary physician or surgeon at a hospital, who alone has the right to refer them to the X-ray department.

Of the 364,033 other persons, examined by radiography, no fewer than 3371 (I quote from Dr. McDowell's report in *Tubercle*, 1955, **36**, 122) came forward individually—because they had symptoms or feared infection from contact—instead of reporting to a general practitioner. Why then have any physicians at all? Surely, as dean of the medical faculty, Professor Thomson does not consider this sound medical practice? Of all the objections to mass radiography, the most serious is that it leads to students being taught that active progressive tuberculosis can be present without signs or symptoms. It has led to neglect of the clinical examination. At an inquest in this area it was reported that a patient who had repeatedly complained of his chest received no treatment; he died on the

way to hospital on the day he was first sent there, and the cause of the death was described as extensive pulmonary tuberculosis *which would have been discovered if he had been X-rayed*. Surely, physical signs and symptoms have not disappeared to the extent that only at death is it possible to see that the patient was not healthy?

Mass radiography must not claim the discoveries made by practitioners. An increasing discovery of active pulmonary tuberculosis by mass radiography would indicate a progressive degeneration of clinical medicine. In fact I regard the propaganda associated with such "medicine" as mass radiography as the iridescence of decay.—JAMES F. BRAILSFORD, F.R.C.P. (Birmingham.)

Homosexuality.—Dr. Tuthill's reasoning (Feb. 11) is throughout based on expediency and not morality. People are inclined to call "right" that which is common or necessitous behaviour. Right behaviour is based on personal judgment in given circumstances, and depends solely on the dictates of conscience. Common practice has never really been the yardstick of moral behaviour, much as some moralists would have us accept this. Numbers do not sanctify. Dr. Tuthill's "logical" inference—that encouraging homosexuality ensures a limiting of their numbers—depends on an analogical argument, which is dangerous, and on the implication that homosexuals beget homosexuals, which is a non sequitur. Homosexuals may well have "high moral standards", but this part, Sir, by no means presupposes the whole.—D. O. HANCOCK, M.B. (Manchester Royal Infirmary.)

Tuberculosis and Liver Biopsy—You have drawn attention (Dec. 31) to work on liver biopsy in tuberculous patients. You regard the finding of tuberculous lesions in the liver in a fair number of these cases as of considerable importance from various points of view. Most of the patients had no clinical signs of generalised tuberculosis.

Tuberculous lesions and tubercle bacilli have previously been demonstrated in bone-marrow obtained by aspiration from patients with miliary tuberculosis (E. M. Schleicher *Amer. Rev. Tuberc.* **1946, 53,** 115). In acute hæmatogenous tuberculosis other workers (S. Katz, S. Lifschutz, *Med. Clin. N. Amer.* **1950, 34,** 1817) have cultivated tubercle bacilli from the bone-marrow in 67 out of 75 patients. They believed that the method was of diagnostic value.

However, the simpler and safer procedure of bone-marrow aspiration seems to be worth considering also in less fulminating cases of tuberculosis. It might be as informative as liver biopsy.—LARS ENGSTEDT, M.D. (Department of Medicine, Karolinska sjukhuset, Stockholm, Sweden.)

Electro-encephalography in Children with Recurrent Abdominal Pain.—The painstaking investigation reported by Dr. Apley and his colleagues (Feb. 11) demands careful analysis. The groups of children described are not quite comparable. Of the 133 who had abdominal pain 96 came for investigation as outpatients, while 37 were picked up at routine school medical inspections. For the 133 with no such pain the corresponding figures were 55 and 78. Though it is not stated in the paper, the outpatient children were drawn from far and wide, and include children of all social classes and all grades of mentality. In the countryside of the West of England children drink much raw milk. Tuberculous mesenteric adenitis and brucellosis, which may cause recurrent abdominal pain, are still extant here. The outpatient group may be unduly loaded with such cases. The school group, however, came from schools in Bristol (where only safe milk is drunk). It is not stated how many they were or of what type. I suspect that special schools for the educationally subnormal and physically handicapped were not included. Certainly the children of richer parents and those who go to boarding or private grammar schools have not been included. Attending school medical inspections armed with a questionnaire is of doubtful value. Dr. Apley and I have done this together in the past. I have pointed out before that the parents of "normal" children at such inspections are very loth to admit any abnormality in their children (*Dent. Rec.* 1953, **73,** 519). When they come to hospital a different story may be obtained. I understand that different persons interviewed the parents in the outpatient department and at the schools.

What is more important is that patients who had fits have been excluded from both groups. I have tried to show that an important factor in the diagnosis of masked epilepsy is a history of fits, or fits occurring later in the disease (*Brit. med. J.* Jan. 28, 1956, p. 233).

Finally these workers ignore abnormalities shown by the response of the electro-encephalogram to hyperpnœa and photic stimulation. If these are included 18 of the 133 children with pain had abnormal electro-encephalograms, while of the 133 without pain only 13 had abnormalities.—HUGH WALLIS, M.B.C.P. (Bath.)

In England Now

"ALL change here for the North Pole" our genial bus conductor called as the bus stopped at Euston, his only outward concession to the weather a woollen scarf. His muffled apathetic passengers, clumsy in their clumping boots, smiled wanly but politely. "Cold enough here" one of us murmured in a gallant attempt at the response which is the London bus conductor's due. "That's where you're wrong" he said; "it's colder here. One degree warmer here than it was in the Arctic Circle yesterday." Congenital hibernators to a man, we gazed at him with admiration. Master of his bus and his fate, by our standards lightly clad, abreast with the latest—most stimulating, if not most accurate—weather reports, he refused to lower his professional standards. On his bus passengers should still be offered tickets, encouragement, and the news of the day.

Obituary

Dr. W. L. H. DUCKWORTH

Dr. Duckworth, the Cambridge anatomist and anthropologist, has died at the age of 85.

Looking back over the years (writes Sir Lionel Whitby) it is simple to give a general appreciation of the influence of "Ducker" on the Cambridge Medical School, but it is more difficult to describe this subtle influence in appropriate words. His brilliance as a teacher was outstanding, for he could clothe the dry bones of anatomy with living and vivid fact beautifully illustrated with a few deft strokes on the blackboard in coloured chalk. But perhaps his greatest impress was on the student as an individual, and thousands of them in his time must have passed through his sensitive hands—which had the long and restless fingers of the accomplished artist.

During the more than sixty years that he served the Medical School as demonstrator, lecturer, and reader, it was Duckworth who captured the admiration, the devotion, and the sincere affection of all medical students who came to Cambridge. And this, irrespective of class, college, creed, colour, or whether they were just nice men (or women), or ordinary men, or lazy men, or energetic men, or great athletes, or clever men who took a first in part I of the natural sciences and another first in part II devoted to the vagaries of embryology, morphology, and comparative anatomy in which Duckworth had an international reputation. The laggard loved him (he was kind in a viva though he would not tolerate ignorance); the women adored him (not only was he tall and lithe and handsome but also he was always the natural courtly and courteous gentleman who never bullied, and they respected him because he never allowed feminine charm to take the place of factual knowledge when his signature was required); the average student was happy, indeed flattered, that Ducker always knew his name, and he could straighten a chaotic dissection in a few seconds with his familiar "and here, or hereabouts, we hope to find, in fact we do find . . . ."

Duckworth was happy in his work, his play, his college, and his innumerable friendships. He never murmured, nor wavered for a moment in his loyalties, when he was not elected to the chair of anatomy, to which the whole student population over many years would have hailed him with unanimous acclamation. At a difficult period of the last war he was chosen to be Master of his college, Jesus College; and in his declining years, well into the 80s, the wheel turned full circle, for he became a demonstrator again as well as an occasional lecturer to the delight and profit of many young enough to be his great-grandchildren; they were fortunate to be taught by a master and to share the privilege and rich experience which so many Cambridge men have treasured all their lives.

He suffered a great sorrow with the death of his wife on St. Valentine's day in 1955. He himself joined her exactly one year afterwards.

Dr. C. J. WILSON, C.M.G., has died in East Africa at the age of 76.

Notes and News

On Feb. 1 the Joint Consultants Committee considered a document embodying the Ministry of Health's proposals on the medical staffing of hospitals. (This was the Ministry's reply to the proposals—based broadly on the Strachan report—which the committee submitted last July.) After a general discussion it was referred to a subcommittee for detailed examination. Pending any changes in the structure of hospital medical staffing, the Ministry is being asked to continue the present transitional arrangements to safeguard the position of senior registrars.

The epidemic of influenza in Suffolk (see *Lancet*, Jan. 28, p. 200) was largely due to virus A. Of the specimens sent for examination, the great majority showed a high titre of A antibodies. There has been a considerable increase in mild influenza-like illness in many parts of the country. Outbreaks are reported from places as far apart as Bristol, Guisborough, West Hartlepool, Great Yarmouth, Dover, and Hastings.

The net cost of the National Health Service in England, Wales, and Scotland in 1956–57 is estimated at £502,715,130. The cost in 1955–56, with the supplementary estimate, is put at £479,337,405. In the coming financial year the social services are to receive altogether an additional £99 million, including an increase of £32 million for the education services. (1956–57, Vote on Account: Civil Estimates. H.M. Stationery Office. 6*d*.)

On Feb. 11 the degree of M.B. of the University of Cambridge was conferred on Rosemary C. Hayball, and (by proxy) on Mary R. Glyn-John.

Dr. E. Stengel has been appointed professor of psychiatry in the University of Sheffield.

Dr. Andrew Curran, deputy medical officer of health for West Ham, has been appointed senior lecturer in public health and social medicine in the University of Glasgow.

On Feb. 11, the Charter Day of the Royal College of Surgeons in Ireland, the honorary fellowship was conferred on Dr. R. B. Cattell and Sir Clement Price-Thomas.

A Chadwick Trust prize of £100, together with a silver medal, has been awarded to Group-Captain Christopher Crowley for his contribution "in organising and administering measures for promoting health in the R.A.F. Maintenance Command."

At the annual dinner of the Hunterian Society on Feb. 16, the Lord Mayor of London, Alderman Cuthbert L. Ackroyd, replied to the toast of the Lord Mayor and Corporation, proposed by Dr. J. Y. Dent. The toast of The Society was proposed by Sir John Maud, and the president, Mr. A. Dickson Wright, responded. Sir Heneage Ogilvie welcomed the guests, for whom Mr. Douglas Fairbanks replied.

The trustees of the Lady Tata Memorial Fund invite applications for grants, scholarships, or fellowships for research on blood diseases, with special reference to leukæmia, in the academic year beginning next October. Programmes of research on any aspect of malignant disease which may throw light on problems of leukæmia will be considered, and awards may be made to investigators of any nationality, working in any country where payment can be made. Particulars and application forms may be had from the secretary of the (European) Scientific Advisory Committee, Lady Tata Memorial Trust, Chester Beatty Research Institute, Fulham Road, London, S.W.3. Applications must be submitted before March 31.

The proceedings of the Fifth International Congress of Blood Tranfusion, held in 1954, have been published in Paris. The 1200 pages cover the four sections—immunohæmatology clinical problems, preparation and preservation of blood and its constituents, and organisation. The book is obtainable, for 5000 francs, from the secretary-general of the congress, 58, Boulevard d'Auteuil, Bologne-sur-Seine, France.

The following doctors have been appointed to the Scottish Health Services Council: Dr. J. C. Macarthur, Prof. W. A. Mackay, Prof. W. M. Millar, Dr. Eric G. Oastler, and Dr. I. B. L. Weir. Dr. C. W. Clayson and Prof. J. L. Henderson have been reappointed.

The first publication of the College of General Practitioners to be offered for sale to the medical profession is a report of their conference on general-practitioner obstetrics held last November. Copies (3*s*. 6*d*.) may be had from the college, 14, Black Friars Lane, London, E.C.4

Four countries—Cambodia, Laos, Thailand, and Vietnam—have decided to merge their malaria control programmes in an effort to rid the Indo-Chinese peninsula of this disease.

Air Commodore A. F. Cook has been appointed an honorary physician to the Queen in succession to Air Vice-Marshal R. H. Stanbridge who has retired from the R.A.F.

A Food Standards Committee report on copper (H.M. Stationery Office, 6*d*.) recommends limits for the copper content of soft-drink concentrates, certain non-alcoholic beverages, yeast and yeast products, and solid pectin. The report does not advise giving statutory effect to these limits, as has been done for the limits recommended for edible gelatin and tomato ketchup.

The report of the Marie Curie Memorial Foundation for 1954–55 records an increase in annual income from £85,000 to £116,000. The Foundation hopes presently to open a fifth home to serve the north-eastern counties.

The British Council for Rehabilitation, in conjunction with Queen's University, Belfast, is holding in Belfast from March 21 to 23 a residential conference on the Development of Rehabilitation Services in Northern Ireland. A public meeting will be held at the City Hall on March 20 and there will be an exhibition of aids for the disabled in daily life. The council's address is Tavistock House (South), Tavistock Square, London, W.C.1.

To try to keep together at home families where children might otherwise have to be received into care, the health committee of the London County Council propose to employ some 50 additional whole-time home helps. The committee also propose to provide selected home helps to work with and teach housecraft to mothers who need help of this kind. Five days' training will be given in the first instance to some 85 home helps, who will work in families under the guidance of health visitors. Basic kitchen equipment will be lent to families when necessary.

The first issue has appeared of the *German Medical Journal*, a monthly English-language edition of the *Deutsche medizinische Wochenschrift*. This edition, edited by G. R. Graham, is obtainable from the publishers, Georg Thieme Verlag, Herdweg 63, Stuttgart, Germany, for £1 10*s*. per annum.

Appointments

BROWN, GEORGE, M.B. Edin.: appointed factory doctor, New Tredegar, Monmouth.

CAMERON, A. H., M.D. Durh.: whole-time consultant pathologist, Children's Hospital, Birmingham.

CLARKE, N. P. G., M.B., B.SC. N.U.I.: registrar in pathology, St. Kevin's Hospital, Dublin.

GUNN, ANNE C., M.B. Glasg., D.P.H.: whole-time medical asst. bacteriologist, Glasgow Corporation.

MCLEAY, CHRISTINA J., M.B. Edin.: county psychiatrist, Staffordshire.

MITCHELL, EVELYN J., M.B. Camb.: asst. resident M.O., Tadworth Court branch, The Hospital for Sick Children, Great Ormond Street, London.

MONKHOUSE, J. P., M.B. Lond., F.R.C.S.: part-time consultant in E.N.T. surgery, Royal National Orthopædic Hospital, London.

NICHOLSON, B. C., M.D. Camb., M.R.C.P., D.P.H.: consultant in medicine, Chapel Allerton Hospital, Leeds.

NIXON, H. H., M.B. Camb., F.R.C.S.: part-time consultant surgeon, The Hospital for Sick Children, Great Ormond Street, London.

PARKES, P. W., M.R.C.S.: appointed factory doctor, Tamworth, Stafford.

TOVEY, J. E., M.B. Brist.: registrar, department of pathology, Southmead Hospital, Bristol.

WETHERELL, G. A., M.CH.ORTH. Lpool, F.R.C.S.: whole-time asst. orthopædic surgeon, Clatterbridge General Hospital.

WHITAKER, WILLIAM, M.D., B.SC. Leeds M.R.C.P.: consultant asst. physician (cardiology), United Leeds Hospitals and Leeds R.H.B.

WHITE, CLEON, M.B. Birm.: school M.O., Birmingham.

WILSON, E. H., M.D. Lpool: asst. physician (S.H.M.O.) geriatrics, Newcastle upon Tyne H.M.C.

Vacancies

ACADEMIC AND EDUCATIONAL

Hosp. for Sick Child W.C.1 Research Fellow (Histochemistry)
Bristol University. Refresher Course for G.P.'s (Obst. & Gyn.), 9th 14th July.
Cambridge. Gonville & Caius College. Berkeley Bye-F'ship.
Durham University & Newcastle United Hosps. Prof. of Med. (Cons.)
Glasgow University. Admissions—Session 1956/7.
Inst. of Laryngology & Otology. Courses for M.O.H.'s, Endoscopy & Aural Surgery, Mar. Apl.
Leeds University. Temp. Lecturer (Dept. Obst. & Gyn.).
Manchester University Fortnight's Course from 28th May, Industrial M.O.'s
Medical Research Council. M.O.
Edinburgh University. Physical Anthropologist
Oxford University Asst. Graduate in Path.
Tancred's Studentships. (Divinity: Medicine: Law).
Saskatchewan University, Canada. Lecturer in Bact.
Sheffield University. Lecturer in Path.

ANÆSTHETICS

Hackney Group H.M.C. Sr. H.O.
Enfield. Chase Farm. Sr. H.O.
North West. Met. R.H.B. Cons.
Bristol United Hosps. & South-Western R.H.B. Reg.
Manchester R.H.B. P.-t Cons & Sr. H.M.O
Plymouth. South Devon & East Cornwall. Sr. H.O.
Redhill County. Locum Reg.
Scotland. Eastern R.H.B. Sr. Reg.
Stafford H.M.C. Sr. H.O.
Tasmania. Royal Hobart. Specialist U.S.A. Cambridge, Mass. Residencies
Wolverhampton Royal. Sr. H.O.

CASUALTY

Hackney, E. 9. H.O.
Wanstead, E.11. Sr. H.O.
Whps Cross, E.11 Sr. H.O.
Chesterfield Royal. H.O.
Hemel Hempstead. West Herts. Jr. H.M.O.
Hertford County. Sr. H.O.
Plymouth. South Devon & East Cornwall. Sr. H.O.
Reading. Battle. H.O.
Sheffield R.H.B. Sr. Casualty Officer
Weston-super-Mare Gen. Sr. H.O.
Windsor King Edward VII. Sr. H.O.

CHEST AND TUBERCULOSIS

Brompton, S.W.3. H.O.'s
Grove Park, S.E.12 Sr. H.O.
Aberdeen Deeside Sanatoria. Reg. & Sr. H.O.
Benenden San. M.O.
Birmingham R.H.B. Reg.
Bristol. Ham Green. Jr. H.M.O.

Bristol. Ham Green. Sr. H.O.
Chelmsford. Broomfield. Locum Sr. H.M.O.
Driffield. Northfield San. Sr. H.O.
Leeds R.H.B. Sr. Reg.
Manchester R.H.B. P.-t. Cons. & Sr. H.M.O.
Paisley & Dist. Hosps. B.O.M. Jr. H.M.O.
Warwick King VII Mem Chest. Jr. H. M.O.

DENTAL SURGERY
Leeds United Hosps. P.-t. Cons.
Leicester Royal Infy H.O.

DERMATOLOGY
Sheffield United Hosps. Sr. Reg.

EAR, NOSE, AND THROAT
North East Met. R.H.B. Reg.
Royal National T.N.&E., W. Reg. or Sr. H.O.
Whipps Cross, E.11. Sr. H.O.
Birmingham & Midland Ear & Throat. Sr. H.O. or H.O.
Glasgow Victoria Hosps. B.O.M. Sr. H.O.
Hull A Group H.M.C. Sr. H.O.
Kingston, Surrey. Sr. H.O.
Portsmouth Group H.M.C. Sr. H.O.
Reading. Royal Berks. H.O.
Welsh R.H.B. Locum Cons.
Welsh R.H.B. Reg.

GERIATRICS
Cardiff. St. David's. Sr. H.O.
East Anglian R.H.B. Reg.

MEDICINE
Bolingbroke, S.W.11. H.O.
Dulwich, S.E.22. H.O.
Elizabeth Garrett Anderson, N.W.1 H.O.
German, E.8. H.O.
Lambeth, S.E.11. H.O.
New End, N.W.3. Sr. H.O. & H.O.
North East Met. R.H.B. Regs.
Royal Northern, N.7. H.O.
South East Met. R.H.B. Reg.
Aylesbury. Stoke Mandeville. H.O.
Birmingham R.H.B. Reg.
Bristol. Southmead Gen. Hosp. Group M.C. Sr. H.O.
Cardiff United Hosps. Reg.
Croydon, Mayday. Reg.
Derby. Derbyshire Royal Infy. Pre-reg. H.O.
East Anglian R.H.B. Reg.
Enfield. Chase Farm. Sr. H.O.
Enfield War Mem. Sr. H.O.
Hillingdon, Middx. Reg.
Hull. Kingston Gen. Pre-reg. H.O.
Huntingdon County. H.O.
King's Lynn Area H.M.C. Sr. H.O.
Manchester. West Manchester H.M.C. Pre-reg. H.O.
Luton & Dunstable. Reg.
Newcastle R.H.B. Reg.
N. Ireland. Roe Valley Hosp. Limavady. Sr. H.O.
Nottingham City. Sr. H.O.
Reading Area Dept. of Med. H.O.'s
Romford. Victoria. H.O.
Southend. Gen. Locum Reg.
Westcliff, Essex. Sr. H.O.
Worcester Royal Infy. H.O.

OBSTETRICS AND GYNÆCOLOGY
Elizabeth Garrett Anderson, N.W.1 H.O.
North Middlesex, N.18 H.O.
St. Mary Abbots, W.8 H.O.
Birmingham R.H.B. P.-t. Cons
Canterbury Kent & Canterbury. H.O.
Chichester Group H.M.C. Reg.
Derby City. Pre-Reg. H.O. or Sr. H.O.
Derby. Derbyshire Hosp. for Women. Pre-reg. H.O. or Sr. H.O.
Dorking Gen. Sr. H.O.
Glasgow Southern Gen. Sr. H.O.
Hastings. Buchanan. H.O.
Hitchin. North Herts. Reg.
Llanelly. Sr. H.O.
Manchester. Northern. Sr. H.O.
Manchester. West Manchester H.M.C. Pre-reg. H.O.
Nottingham City. H.O.
Portsmouth Group H.M.C. Pre-Reg. H.O.
Rochford, Essex, Gen. Sr. H.O.
Salisbury Gen. H.O.
Shrewsbury Royal Salop Infy. & Copthorne. H.O.
Stockport. Stepping Hill. Sr. H.O. & H.O.
Stoke-on-Trent City Gen. Pre-reg. H.O.'s
Sunderland Royal Infy. H.O.

OPHTHALMOLOGY
Moorfields Westminster & Central Eye. Reg.
Coventry & Warwickshire. Sr. H.O.
East Anglian R.H.B. Reg.
Epping Group H.M.C. P.-t. Sr. H.M.O.
Isleworth. South Middlesex. Sr. H.O.
Leeds R.H.B. Sr. Reg.
Maidstone. Kent County Ophthalmic & Aural. Sr. H.O.
Manchester United Hosps. Sr. H.M.O.
Nottingham & Midland Eye Infy. Sr. H.O.
Oxford R.H.B. P.-t. Cons.

ORTHOPÆDICS
St. James', S.W.12. Sr. H.O.
Bebington .Clatterbridge. Jr. H.M.O.
Braintree. Black Notley. H.O. & Locum H.O.
Bridge of Earn, Perthshire. Sr. H.O. & H.O.
Doncaster Royal Infy. Reg.
Ipswich & East Suffolk. Sr. H.O.
Louth County Infy. Reg.
Newcastle Gen. Sr. H.O.
Newcastle R.H.B. Reg.
Northern Ireland Hosps. Auth. Reg.
Nottingham Gen. Sr. H.O.
Paisley & Dist. Hosps. B.O.M. Jr. H.M.O.
Romford. Oldchurch. H.O.
Scotland South-Eastern R.H.B. Reg.
Southampton. Royal South Hants Sr. H.O.
Tasmania. Royal Hobart. Asst.

PÆDIATRICS
Edgware Gen. Reg.
Hereford County. H.O.
Manchester. West Manchester H.M.C. Sr. H.O.
Manchester. West Manchester H.M.O.
Newcastle R.H.B. Reg. H.O.
Nottingham Child's. Sr. H.O.
Reading. Royal Berks. H.O.
St. Alban's City. H.O.
Swindon & Dist. H.M.C. Sr. H.O.
Canada. Child's. Hosp., Vancouver. Residents.
Ibadan, Nigeria. Univ. College Hosp. Reg.

PATHOLOGY
Bath. St. Martin's. Sr. H.O.
Group Pathological Lab., W.8. Sr. H.O.
Royal Masonic, W.6. Sr. Reg.
Liverpool United Hosps. Sr. H.O. & Sr. Reg.
Birmingham. Dudley Road. Sr. H.O. or Jr. H.M.O.

PSYCHIATRY
South-Western R.H.B. Sr. H.M.O.
South West Met. R.H.B. Sr. H.M.O.
St. Thomas's, S.E.1. H.O.
Bury & Rossendale H.M.C. Jr. H.M.O.
Newcastle R.H.B. Cons.
Newport, I.W. Whitecroft. Jr. H.M.O.
Northern Ireland Hosps. Auth. Reg.
Norwich. Hellesdon. Sr. H.O.
Retford. Rampton. Sr. H.M.O.
Scotland. Eastern R.H.B. Cons.
Sheffield. Middlewood. Jr. H.M.O. or Sr. H.O.
Sheffield R.H.B. Sr. Reg.
Shrewsbury Group. Locum Reg.
Willerby, E. Yorks. De la Pole. Jr. H.M.O.

RADIOLOGY
Birmingham R.H.B.
Cardiff United Hosps. Cons.
Cardiff United Hosps. Sr. Reg.
Leeds R.H.B. Sr. Reg.
Manchester R.H.B. Sr. H.M.O.
Manchester R.H.B. Sr. Regs.

RADIOTHERAPY
Hammersmith Hosp. & Postgrad. Med. School, W.12. Sr. H.M.O.

RESEARCH
Sheffield United Hosps. & R.H.B. Reg.

SURGERY
Central Middlesex, N.W.10. Reg.
Elizabeth Garrett Anderson. N.W.1 H.O.
Highlands Gen., N.21. H.O.
Hornsey Central, N.8. Sr. H.O.
New End, N.W.3. H.O.'s.
North East Met. R.H.B. Regs.
North West Met. R.H.B. Cons.
South Lodge, N.21 H.O.
Bexhill. Sussex. Pre-Reg. H.O.
Birmingham Accident. H.O.'s
Bishop Auckland. Gen. H.O.
Blackpool. Victoria. Pre-reg. H.O.
Bolton & Dist. H.M.C. H.O.'s
Canterbury Kent & Canterbury. H.O.
Carlisle. Cumberland Infy. H.O.'s
Chelmsford & Essex. Pre-reg. H.O.'s
Chesterfield Royal. H.O.
Chichester. Royal West Sussex. H.O.
Chichester. Royal West. Sussex. Reg.
Darlington Mem. Sr. H.O.
Dorchester Dorset County. H.O.
Dudley, Stourbridge & Dist. Sr. H.O.
Enfield. Chase Farm. H.O.
Glantawe H.M.C. Pre-reg. H.O.'s
Haslemere & Dist. H.O. or Locum.
Hastings. Royal East Sussex. Per-Reg. H.O.
Haverfordwest. Pembroke County War. Mem. Sr. H.O.
Hitchin. Lister. H.O.
Huddersfield Royal Infy. H.O.
Hull. Kingston Gen. H.O.
Kidderminster & Dist. Gen. Pre-reg. H.O.
King's Lynn Area H.M.C. H.O.
Louth County Infy. Sr. H.O.
Macclesfield & Dist. H.M.C. Pre-reg. H.O.
Manchester R.H.B. Reg.
Manchester United Hosps. Sr. H.O.'s.
Manchester. West Manchester H.M.C. Pre-reg. H.O.'s
Middlesbrough. North Ormesby. H.O.'s
Northern Ireland Hosps. Auth. Cons.
Nottingham Child's. Sr. H.O.
Nottingham Gen. Pre-reg. H.O.
Nottingham Highbury. Sr. H.O.
Portsmouth Group H.M.C. Sr. H.O. & Pre-reg H.O.
Redhill County. Pre-reg. H.O.
Rochdale & Dist. H.M.C. H.O.
Romford. Oldchurch. H.O.
Sheffield City Gen. H.O.
Stockport Infy. H.O.'s
Stockport Infy. Sr. H.O.
Wakefield. Pinderfields Gen. Sr. H.O.
Wolverhampton Royal. Pre-reg. H.O.'s & Locum Pre-reg. H.O.'s
Worcester Royal Infy. Sr. H.O.
Worksop. Victoria. Reg.

THORACIC SURGERY
Brompton, S.W.3. Sr. H.O. or Reg.
North Middlesex, N.18. Sr. H.O.
Ilkley. Middleton. Sr. H.O.
Southampton Chest. Reg.

GENERAL
U.S.A. Bethesda. Cincinnati. Rotating Interns

NON-MEDICAL VACANCIES
St. Alban's Hill End. Biochemist (Sr. grade).

PUBLIC APPOINTMENTS
Aldermaston. Atomic Weapons Res. Est. Med. Lab. Tech.
Bedfordshire C.C. & Bedford Borough. Div. M.O. M.O.H. & School M.O.
Birmingham City. Temp. M.O.'s.
Bristol City & County. Deputy M.O.H., Deputy Princ. Sch. M.O., & Deputy Port M.O.
Derbyshire C.C. Asst. Maty. & Child Welfare M.O.'s & Sch. M.O.'s.
Doncaster County Borough. Asst. M.O.H.
Durham C.C. Senior Maty & Child Welfare M.O. (Female).
Govt. of U.K. of Libya. Path. & Bact.
H.M. Oversea Service. Western Nigeria. M.O.'s
National Coal Board (East Midlands Div.). Asst. Area M.O.
Nigerian Federal Govt. Service. Path.
Nottinghamshire C.C. Sr. Clin. M.O. & Asst. County M.O.
Peterborough Joint Education Board. School M.O. & Asst. M.O.H.
Smethwick County Borough. Asst. M.O.H. & Sch. M.O.
Warwickshire C.C. Asst. County M.O.H.

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